

METHOD AND APPARATUS FOR
ULTRASONIC CONTINUOUS, NON-INVASIVE
BLOOD PRESSURE MONITORING

ABSTRACT OF THE DISCLOSURE

5 Ultrasound is used to provide input data for a blood pressure estimation scheme. The use of transcutaneous ultrasound provides arterial lumen area and pulse wave velocity information. In addition, ultrasound measurements are taken in such a way that all the data describes a single, uniform arterial segment. Therefore a computed area relates only to the arterial blood volume present. Also, the measured pulse wave velocity is directly related to the mechanical properties of the segment of elastic tube (artery) for which the blood volume is being measured. In a patient monitoring application, the operator of the ultrasound device is eliminated through the use of software that automatically locates the artery in the ultrasound data, e.g., using known edge detection techniques. Autonomous operation of the ultrasound system allows it to report blood pressure and blood flow traces to the clinical users without those users having to interpret an ultrasound image or operate an ultrasound imaging device.

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